

PRELIMINARY AMENDMENT
U.S.S.N. 10/616,617 (DP-309422 RCE) - 8

REMARKS

Claims 1 – 3, 7 – 16 and 18 – 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pao et al. (US 5,931,371).

Independent claims 1 and 12 have been amended to more clearly differentiate and distinguish the present invention over Pao et al. as well as the other art of record.

Claim 1 specifies "An electronic package comprising: ... a solder joint ...comprising a reflowable solder ... ***wherein said reflowable solder is formed of monolithic material having a relatively low melting temperature, and wherein said stand-off members are composed of an aggregation of a reflowable solder having a relatively high melting temperature and a non-solder material which maintains dimensional integrity at said relatively high melting temperature.***" Restated, the solder joint is composed of a low temperature solder and stand-off members. The stand-off members are themselves electrically conductive, have an affinity for solder, and are constructed as an admixture or aggregation of a high temperature solder and a non-solder material, such as glass, which maintains its dimensional integrity at or above the relatively high melting temperature, thus ensuring the maintenance of a substantially fixed separation between the circuit board and surface mount device.

Pao et al. discloses the use of a stand-off ball 18 monolithically constructed of a single type of high temperature solder. Refer column 3, lines 8 – 28. Pao et al.

PRELIMINARY AMENDMENT
U.S.S.N. 10/616,617 (DP-309422 RCE) - 9

does not disclose or suggest the use of a stand-off ball constructed of two distinct materials as is presently claimed.

Claim 12 similarly specifies "A method of forming an electronic package ... comprising: ... ***preforming a plurality of discrete electrically conductive stand-off members having an affinity for solder as an aggregation of a reflowable solder having a relatively high melting temperature and a non-solder material which maintains dimensional integrity at said relatively high melting temperature ...***". For the reasons set forth above, claim 12 is clearly distinguishable from Pao et al..

The Applicant, accordingly, requests that this rejection be withdrawn.

Claims 4 – 6 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pao et al. as applied to claims 1 and 12 , and further in view of either Avery et al. (US 6,340,113) or Alcoe et al. (US 6,631,078).

Claims 4 – 6 and 17 depend, directly or indirectly, from independent claims 1 or 12 and are distinguishable over the art of record for the reasons set forth herein above.

The Applicant, accordingly, requests that this rejection be withdrawn.

PRELIMINARY AMENDMENT
U.S.S.N. 10/616,617 (DP-309422 RCE) - 10

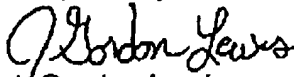
Conclusion

It is believed, in view of the amendments and remarks herein, that all grounds of rejection of the claims have been addressed and overcome, and that all claims are in condition for allowance.

If it would further prosecution of the application, the Examiner is urged to contact the undersigned at the phone number provided.

The Commissioner is hereby authorized to charge any fees associated with this communication to Deposit Account No. 50-0831.

Respectfully submitted,



J. Gordon Lewis
Reg. No. 28735
(248) 813-1234